

Section 8.4. Quiz – Pangolin Sampling

ANSWER KEY

1. The following samples should be collected from each live animal whenever possible (select ONE best answer):

- a. Two fecal samples/rectal swabs, two oral swabs, two whole blood samples, two serum samples, and two urogenital swabs/urine samples
- b. Two fecal samples/rectal swabs, two nasal swabs, and two whole blood samples
- c. Two serum samples, two urogenital swabs/urine samples, and two ectoparasite samples
- d. One whole blood sample, one serum sample, one nasal swab, one fecal sample/rectal swab, and one urogenital swab/urine sample

All of these samples should be collected from pangolins whenever possible.

2. The maximum safe quantity of blood that can be collected from live pangolins is:

- a. 0.1 cc of blood per 100 g of body mass
- b. 1 cc of blood per 100 g of body mass
- c. 10 cc of blood per 100 g of body mass
- d. 0.5 cc of blood per 100 g of body mass

Up to 1% of a pangolin's body weight can be safely collected. While it is not necessary to always take the maximum allowable amount, it is generally a good idea to take more blood than the absolute minimum needed for testing in case of unpredictable spillage, contamination, etc.

3. Which of the following is an acceptable site for venipuncture in pangolins:

- a. Jugular vein
- b. Ventral coccygeal vein
- c. Femoral vein
- d. All of the above

All of these are acceptable venipuncture sites. The ventral coccygeal vein is often more easily accessible than the femoral and jugular veins which can be obstructed by the testes/fat pads and salivary glands respectively.

4. Due to their inability to bite, ease of manual capture, and relatively docile nature, gloves are not required when handling pangolins.

True False

Although typically harmless, pangolins do have sharp claws and scales that can cause scratches. In addition, the relatively unknown knowledge of pathogens carried by pangolins makes it essential for

proper PPE – including gloves, N95 respirators, and dedicated long-sleeved clothing - to be worn whenever handling them.

5. Pangolins are capable of rolling into a defensive ball when threatened, which can make it challenging to obtain samples. Which of the following methods is an appropriate way of sampling pangolins that have rolled into a defensive ball:

- a. Pangolins should never be unrolled from a defensive ball, even if no samples can be obtained
- b. Hold the base of the tail and use the centripetal force of a downward swing, similar to that of a yo-yo, to unravel the body.
- c. Use proper anesthetic protocol to relax the pangolin and gently unroll them.
- d. B and C

Only “C” is an acceptable method. Attempting to forcefully unroll an awake pangolin by prying them open or forcefully swinging them by their tail is likely to cause severe physical trauma to the animal.

6. Which of the following is an acceptable method of anesthetic restraint in pangolins:

- a. Induction with 2-5% isoflurane gas followed by 1-2% maintenance
- b. 9 mg/kg ketamine and 1 mg/kg xylazine given orally
- c. 1 mg/kg ketamine and 9 mg/kg xylazine given intramuscularly into the thigh muscle
- d. All of the above

Inhalant gas anesthesia as described above is the preferred method of restraint. A mix of ketamine and xylazine can be given intramuscularly, but the appropriate dose is 9 mg/kg ketamine and 1 mg/kg xylazine.

7. Respiratory distress is a possible complication of anesthetic restraint in pangolins. If a pangolin stops breathing under anesthesia, non-invasive intubation may be performed by inserting a flexible oro-tracheal tube:

True False

Due to their anatomy, non-invasive intubation is not possible in pangolins. In the case of respiratory collapse, emergency surgical tracheotomy may be performed by a trained veterinary professional.

8. Pangolins are especially prone to health complications due to stress from handling. Which of the following are best practices to minimize stress while handling and sampling pangolins.

- a. Keep your distance, speak with a soft voice, and avoid sudden movements while maneuvering around captured or recovering pangolins.
- b. Keep capture boxes covered with a tarp/towel and in dark, quiet locations while an animal is recovering.
- c. Cover the eyes of anesthetized pangolins with a towel or cloth to reduce visual stimuli.
- d. All of the above

All of these are best practices for reducing stress in captured pangolins.